Volunteer Lake Assessment Program Individual Lake Reports

STOCKER POND, GRANTHAM, NH

MORPHOMETRIC DATA

Watershed Area (Ac.):	1,253	**Max. Depth (m):**	5.8	**Flushing Rate (yr^{-1}):**	3.5
Surface Area (Ac.):	64	**Mean Depth (m):**	2.7	**P Retention Coef:**	0.56
Shore Length (m):	2,600	**Volume (m^3):**	697,000	**Elevation (ft):**	1019

TROPHIC CLASSIFICATION

Year	Trophic class
1983	MESOTROPHIC
2001	MESOTROPHIC

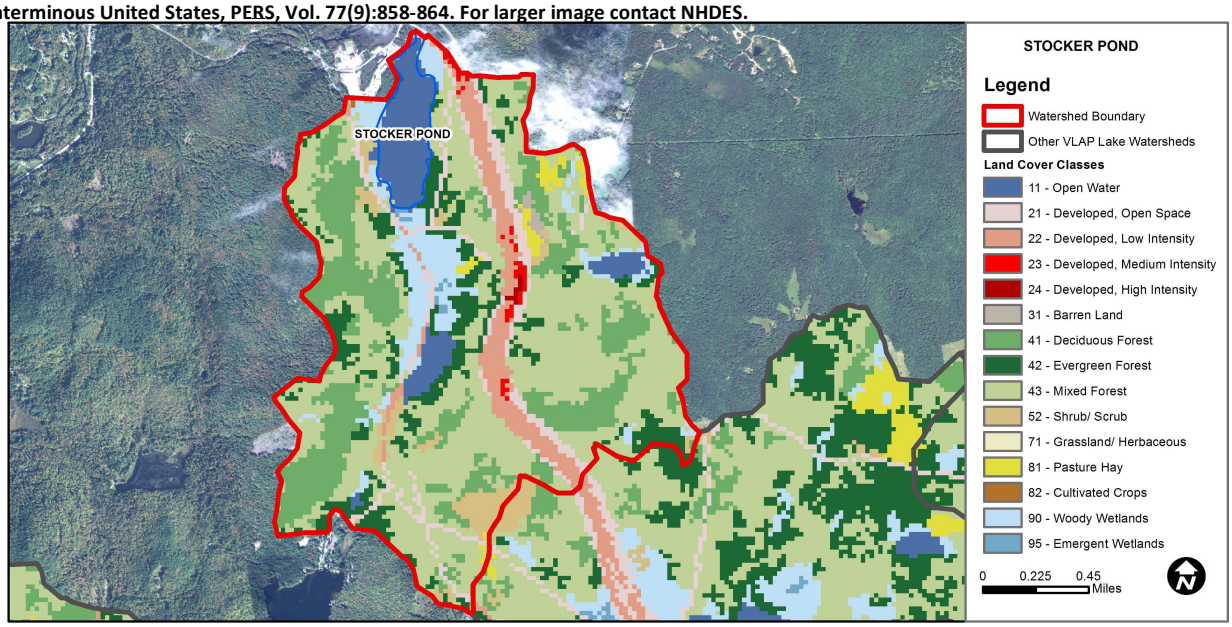
KNOWN EXOTIC SPECIES

The Waterbody Report Card tables are generated from the 2012 305(b) report on the status of N.H. waters, and are based on data collected from 2001-2011.

Designated Use	Parameter	Category	Comments
Aquatic Life	Phosphorus (Total)	Good	>/=5 samples and median is < threshold but > 1/2 threshold value.
	pH	Slightly Bad	>10% of samples exceed criteria by a small margin (minimum of 2 exceedances).
	D.O. (mg/L)	Very Good	At least 10 samples with 0 exceedances of criteria.
	D.O. (% sat)	Slightly Bad	>10% of samples exceed criteria by a small margin (minimum of 2 exceedances).
	Chlorophyll-a	Good	>/=5 samples and median is < threshold but > 1/2 threshold value.
Primary Contact Recreation	E. coli	Encouraging	>2 samples exist that are > 75% of geometric mean criteria, but not enough samples to calculate geomertic mean. No single sample exceedances. More data needed.
	Cyanobacteria	Slightly Bad	Cyanobacteria bloom(s).
	Chlorophyll-a	Very Good	At least 10 samples with 0 exceedances of criteria.

WATERSHED LAND USE SUMMARY

Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011. Completion of the 2006 National Land Cover Database for the Conterminous United States, PERS, Vol. 77(9):858-864. For larger image contact NHDES.



Land Cover Category	% Cover	Land Cover Category	% Cover	Land Cover Category	% Cover
Open Water	6.8	Barren Land	0.38	Grassland/Herbaceous	0
Developed-Open Space	5.6	Deciduous Forest	18.47	Pasture Hay	1.25
Developed-Low Intensity	5.65	Evergreen Forest	9.99	Cultivated Crops	0.07
Developed-Medium Intensity	0.59	Mixed Forest	41.32	Woody Wetlands	6.42
Developed-High Intensity	0.13	Shrub-Scrub	3.17	Emergent Wetlands	0.24

VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS
STOCKER POND, GRANTHAM, NH
2012 DATA SUMMARY

OBSERVATIONS AND RECOMMENDATIONS (*Refer to Table 1 and Historical Deep Spot Data Graphic)*

- **CHLOROPHYLL-A:** Chlorophyll levels decreased slightly from 2011 and were approximately equal to the NH lake median. Historical trend analysis indicates chlorophyll levels fluctuate from year to year.
- **CONDUCTIVITY/CHLORIDE:** Conductivity levels were much greater than the NH lake median due to road salt application on I-89 which runs along the Eastern and Northern edge of the pond.
- **E. COLI:** E. coli levels were well below state standards for public beaches and surface waters.
- **TOTAL PHOSPHORUS:** Epilimnetic (upper water layer) and Hypolimnetic (lower water layer) phosphorus levels remained stable in July and August and were relatively low. Historical trend analysis indicates epilimnetic phosphorus levels fluctuate from year to year. Inlet and Outlet phosphorus levels were low.
- **TRANSPARENCY:** Transparency improved slightly from 2011 and was stable in July and August. Historical trend analysis indicates a significantly decreasing (worsening) transparency since monitoring began.
- **TURBIDITY:** Hypolimnetic turbidity was elevated possibly due to the release of organic compounds during periods of oxygen depletion and/or bottom sediment contamination. Inlet turbidity was elevated and sample receipt checklists indicate organic matter in the samples.
- **PH:** pH levels were sufficient to support aquatic life, however have historically dropped below desirable ranges.
- **RECOMMENDED ACTIONS:** Water quality improved slightly in 2012 likely due to the dry weather conditions and lack of stormwater runoff. Educate watershed residents on ways to reduce stormwater runoff from their properties utilizing DES' "Homeowner's Guide to Stormwater Management". Do not collect Inlet sample if water level is too low to collect a sample free of sediment or organic matter. Keep up the great work!

Table 1. 2012 Average Water Quality Data for STOCKER POND

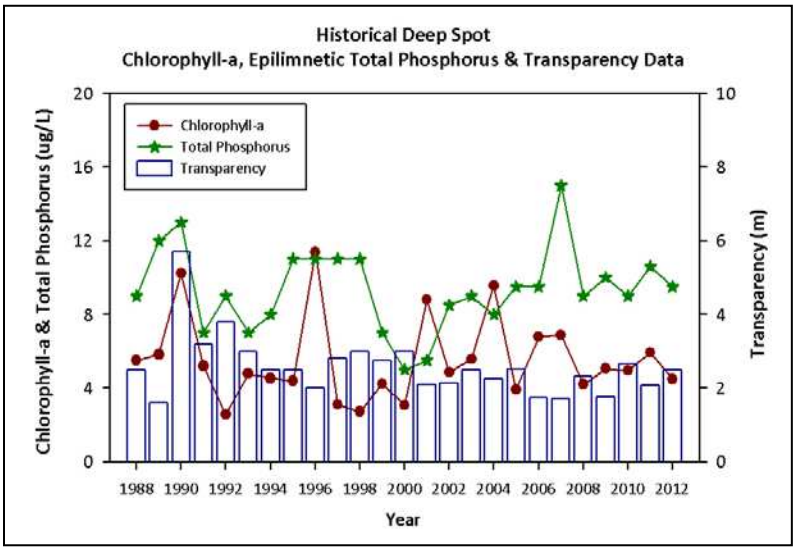
Station Name	Alk.	Chlor-a	Cond.	E. Coli	Total P	Trans.		Turb.	pH
	mg/l	ug/l	uS/cm	#/100ml	ug/l	m		ntu	
						NVS	VS		
Deep Epilimnion	18.0	4.48	140.8		10	2.50	3.00	1.34	6.98
Deep Hypolimnion			187.9		13			3.72	6.63
Inlet			272.4	13	10			3.00	6.29
Outlet			186.4	3	9			1.35	7.01

NH Median Values: Median values for specific parameters generated from historic lake monitoring data.
Alkalinity: 4.9 mg/L
Chlorophyll-a: 4.58 mg/m^3
Conductivity: 40.0 uS/cm
Chloride: 4 mg/L
Total Phosphorus: 12 ug/L
Transparency: 3.2 m
pH: 6.6

NH Water Quality Standards: Numeric criteria for specific parameters. Results exceeding criteria are considered a water quality violation.
Chloride: < 230 mg/L (chronic)
E. coli: > 88 cts/100 mL – public beach
E. coli: > 406 cts/100 mL – surface waters
Turbidity: > 10 NTU above natural level
pH: 6.5-8.0 (unless naturally occurring)

HISTORICAL WATER QUALITY TREND ANALYSIS

Parameter	Trend	Explanation
Chlorophyll-a	Variable	Data fluctuate annually, but are not significantly increasing or decreasing.
Transparency	Degrading	Data significantly decreasing (worsening).
Phosphorus (epilimnion)	Variable	Data fluctuate annually, but are not significantly increasing or decreasing.



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